

```

chain nodes :
  13 14 15 16 17 18 19 22 23
ring nodes :
  1 2 3 4 5 6 7 8 9 10 11 12
chain bonds :
  6-13 9-14 13-15 14-16 15-17 15-18 16-17 16-19
ring bonds :
  1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12
exact/norm bonds :
  6-13 9-14 13-15 14-16 15-17 15-18 16-17 16-19
normalized bonds :
  1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12
isolated ring systems :
  containing 1 : 7 :

```

```

Match level :
  1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
  12:Atom 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:Atom 18:CLASS 19:CLASS 22:Atom 23:Atom
  24:Atom 25:Atom

```

```

Generic attributes :
17:
Saturation : Unsaturated
Number of Carbon Atoms : less than 7
Number of Hetero Atoms : Exactly 1
Type of Ring System : Monocyclic
22:
Number of Carbon Atoms : less than 7
Number of Hetero Atoms : 2 or more
Type of Ring System : Monocyclic
23:
Number of Carbon Atoms : less than 7
Number of Hetero Atoms : 2 or more
Type of Ring System : Monocyclic

```

```

Element Count :

```

Node 17: Limited

C,C5

N,N1

O,O0

S,S0

Node 22: Limited

C,C4

N,N2

O,O0

S,S0

Node 23: Limited

C,C4

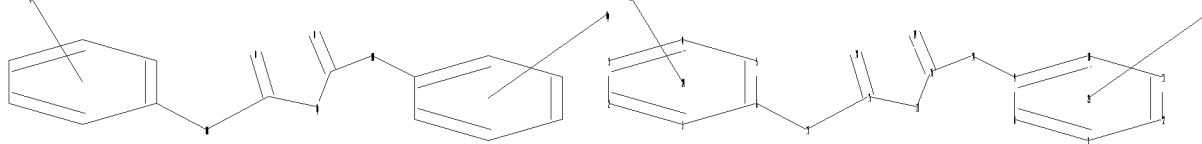
N,N2

O,O0

S,S0

=&gt;

Uploading C:\Program Files\Stnexp\Queries\10531107.str



chain nodes :

13 14 15 16 17 18 19 22 23

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12

chain bonds :

6-13 9-14 13-15 14-16 15-17 15-18 16-17 16-19

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12

exact/norm bonds :

6-13 9-14 13-15 14-16 15-17 15-18 16-17 16-19

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12

isolated ring systems :

containing 1 : 7 :

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom

11:Atom 12:Atom 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:Atom 18:CLASS

19:CLASS 22:Atom 23:Atom 24:Atom 25:Atom

Generic attributes :

17:

Saturation : Unsaturated

Number of Carbon Atoms : less than 7

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C,C5

N,N1

O,O0

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Node 22: Limited

C,C4

N,N2

O,O0

S,S0

Node 23: Limited

C,C4

N,N2

O,O0

S,S0

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

Structure attributes must be viewed using STN Express query preparation.

=> s l1 sss sam

SAMPLE SEARCH INITIATED 14:44:29 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 32344 TO ITERATE

6.2% PROCESSED 2000 ITERATIONS

0 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 636125 TO 657635

PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1

=> s l1 sss ful

FULL SEARCH INITIATED 14:45:03 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 651575 TO ITERATE

100.0% PROCESSED 651575 ITERATIONS

4 ANSWERS

SEARCH TIME: 00.00.09

L3 4 SEA SSS FUL L1

=> => s l3

L4 1 L3

=> d l4 bib,ab,hitstr

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2004:333710 CAPLUS  
 DN 140:357366  
 TI Preparation of N,N'-bis(pyrimidinylphenyl)pyridinedicarboxamides as  
 protein tyrosine kinase inhibitors  
 IN Danter, Wayne R.; Ma, George; Lazarowych, Natalie; Houldsworth, Stephen;  
 Brown, Martyn; Rusu, Ghenadie; Zhong, Jianhua  
 PA Can.  
 SO PCT Int. Appl., 44 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

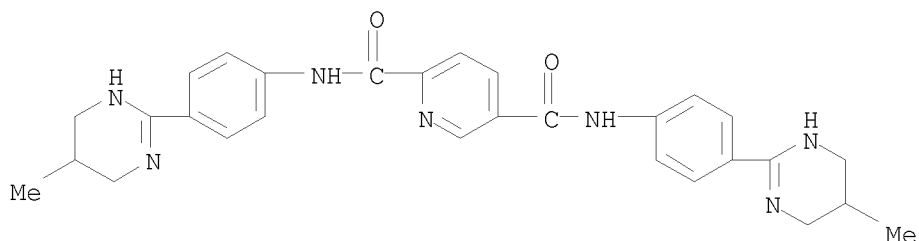
Applicant's

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004033446	A1	20040422	WO 2003-CA1524	20031009
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2542007	A1	20040422	CA 2003-2542007	20031009
AU 2003273675	A1	20040504	AU 2003-273675	20031009
EP 1551824	A1	20050713	EP 2003-757583	20031009
EP 1551824	B1	20071212		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AT 380810	T	20071215	AT 2003-757583	20031009
ES 2298563	T3	20080516	<del>ES 2003-757583</del>	20031009
US 20060111371	A1	20060525	US 2005-531107	20051107
PRAI US 2002-416911P	P	20021009		
WO 2003-CA1524	W	20031009		

OS MARPAT 140:357366

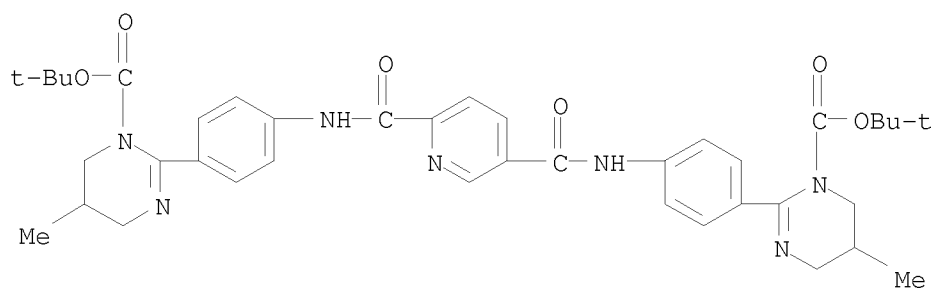
AB ReTitle compds. I [wherein R1 and R2 = independently H, alkyl, alkenyl, alkynyl, halo, or (un)substituted (hetero)aryl, amino, or acyl; with the proviso that when R1 = H, then R2 ≠ H; and pharmaceutically acceptable salts, stereoisomers, and mixts. thereof] were prepared for use in pharmaceutical compns. for treatment of cancer involving inappropriate tyrosine kinase activity. For example, cycloaddn. of 4-nitrobenzonitrile with 1,3-diamino-2-methylpropane with Na in anhydrous EtOH gave 5-methyl-1,4,5,6-tetrahydro-2-(4-nitrophenyl)pyrimidine (23%). Boc-protection (89%) with di-tert-Bu dicarbonate in the presence of N,N-dimethylaminopyridine in CH<sub>2</sub>Cl<sub>2</sub>, followed by reduction (99%) with Raney Ni in anhydrous EtOH, provided 1-Boc-5-methyl-1,4,5,6-tetrahydro-2-(4-aminophenyl)pyrimidine. Coupling of the amine with pyridine-2,5-dicarboxylic acid using HBTU and HOBT in anhydrous DMF afforded the Boc-protected intermediate (38%), which was treated with a cold saturated HCl solution in MeOH to give I•2HCl (R1 = R2 = Me; II; COTI-001) in 74% yield. The latter showed -Log(GI<sub>50</sub>) = -5.0 against K562(CML) leukemia cells expressing abnormal protein tyrosine kinase in an in silico assay and was tolerated by mice at a dosage of about 25 mg/kg or less in an in vivo toxicity study.

IT 681806-85-9P, COTI 001  
 RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (anticancer agent; preparation of N,N'-bis(pyrimidinylphenyl)pyridinedicarboxamides as protein tyrosine kinase inhibitors)  
 RN 681806-85-9 CAPLUS  
 CN 2,5-Pyridinedicarboxamide, N2,N5-bis[4-(1,4,5,6-tetrahydro-5-methyl-2-pyrimidinyl)phenyl]-, hydrochloride (1:2) (CA INDEX NAME)



● 2 HCl

IT 681216-87-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of N,N'-bis(pyrimidinylphenyl)pyridinedicarboxamides as protein tyrosine kinase inhibitors)  
 RN 681216-87-5 CAPLUS  
 CN 1(4H)-Pyrimidinecarboxylic acid, 2,2'-[2,5-pyridinediylbis(carbonylimino-4,1-phenylene)]bis[5,6-dihydro-5-methyl-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/531,107

=> log y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

5.93

184.96

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-0.80

-0.80

STN INTERNATIONAL LOGOFF AT 14:46:09 ON 15 SEP 2008